

What is Claimed Is:

1. A pharmaceutical composition for the treatment or amelioration of central nervous system dependent conditions comprising (i) an effective amount of agmatine, an agmatine analog, or a pharmaceutically acceptable salt thereof and (ii) a pharmaceutically acceptable carrier.

2. The pharmaceutical composition according to claim 1 comprising a dose of about 0.1 mg/kg to about 300 mg/kg of agmatine, an agmatine analog, or a pharmaceutically acceptable salt thereof.

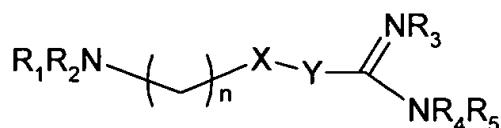
3. The pharmaceutical composition according to claim 1 comprising a dose of about 1 mg/kg to about 50 mg/kg of agmatine, or a pharmaceutically acceptable salt thereof.

4. The pharmaceutical composition according to claim 2 comprising saline as the pharmaceutical carrier

5. A method of treating, ameliorating, or preventing epilepsy, seizure, or electroconvulsive disorders in a subject in need thereof, the method comprising:

administering a pharmaceutical composition comprising an effective amount of agmatine, an agmatine analog, or a pharmaceutically acceptable salt thereof to treat, reduce, or prevent the disorder in the subject.

6. A method according to claim 5, wherein the agmatine or agmatine analog has the following formula:



wherein n is 0 to about 10;

- 5 R_1 , R_2 , R_3 , R_4 , and R_5 , are each independently, or any combination thereof: hydrogen, hydroxy, substituted or unsubstituted C_{1-10} alkyl, substituted or unsubstituted C_{3-8} cycloalkyl, substituted or unsubstituted arylalkyl (comprising $Ar-(CH_2)_m$; where Ar is aromatic and m is 0 to about 10) substituted or unsubstituted C_{1-10} alkoxy, substituted or unsubstituted C_{1-10} acyl, halogeno, amido, phenyl, thio, amino; and

10 X and Y are each independently: O , NH , CH_2 , CF_2 , Se , $C=O$, $C=N$, $C=S$, or S ; or $X-Y$ together is $HC=CH$, $C\equiv C$, $N=N$, $N=CH$, $CH=N$, or a saturated or unsaturated ring.

7. A method according to claim 5, wherein the pharmaceutical composition comprises agmatine or its pharmaceutically acceptable salt and a pharmaceutically acceptable carrier.

8. A method according to claim 5, wherein the composition is administered to a human subject in a dose of about 0.1 to about 500 mg of the agmatine or agmatine analog per kilogram of the human subject's weight.

9. A method according to claim 8, wherein the composition is administered in a dose of about 0.1 to about 50 mg/kg per day indefinitely or until symptoms associate with the condition or disorder cease.

10. A method of treating the occurrence of epilepsy, seizure or electroconvulsive disorders in a human comprising the step of administering an effective amount of agmatine, an agmatine analog or a pharmaceutically acceptable salt thereof to a human in need thereof and preventing or reducing the
- 5 disorder.

11. A method according to claim 10, comprising preventing or reducing seizure activity as the disorder.

12. A method according to claim 10, comprising preventing or reducing epileptic activity as the disorder.

13. A method of treating or preventing epilepsy seizure or electroconvulsive disorders in a human comprising:

identifying a human subject in need of said treatment or prevention; and

administering an effective amount of agmatine, an agmatine analog or a
5 pharmaceutically acceptable salt thereof to the human subject.

14. A method according to claim 13, comprising identifying a human subject in need of said treatment by analyzing an electroencephalogram taken of the human subject.

15. A method according to claim 13, comprising identifying a human subject in need of said treatment by observing one or more features associated with a seizure.

16. A method according to claim 13, comprising administering the effective amount of agmatine, an agmatine analog or a pharmaceutically acceptable salt thereof to the human subject indefinitely or until the symptoms or features associate with the disorder cease.

17. A method according to claim 13, comprising preventing or reducing epileptic activity as the disorder

18. A method according to claim 13, comprising administering the effective amount of agmatine, an agmatine analog or a pharmaceutically acceptable salt thereof as a pharmaceutical composition.

19. A method according to claim 13, comprising administering the effective amount of agmatine, an agmatine analog or a pharmaceutically acceptable salt thereof parenterally.

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20. A method according to claim 13, comprising administering the effective amount of agmatine, an agmatine analog or a pharmaceutically acceptable salt thereof orally.

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